

1
a component transfer mechanism oriented to retrieve the at least one component from the component feed source and place said retrieved component in a transferred area such that the fiducial marker on said retrieved component is visible for detection;

an optical fiducial marker detector oriented to detect the fiducial marker on said retrieved component and generate alignment data for said retrieved component; and

2
a controller coupled to said fiducial marker detector for receiving said alignment data therefrom for said retrieved component and containing instructions which, when executed, cause said controller to compare said alignment data for said retrieved component to desired alignment data indicative of desired lead orientations, said controller sending realignment signals to said component transfer mechanism for said retrieved component wherein the alignment data therefor differs from said desired alignment data to cause said component transfer mechanism to realign said retrieved component when the alignment data therefor differs from the desired alignment data.

82. (Amended) A component transfer system for transferring at least one electrical component to be placed on a substrate, wherein the component has a superficial fiducial marker [thereon] on a surface of the component and wherein the fiducial marker indicates an orientation of a plurality of leads protruding from the component, said component transfer system comprising:

a component feed source supporting the at least one component;

2
a component transfer mechanism oriented to retrieve the at least one component from the component feed source and place said retrieved component in a transferred area such that the fiducial marker on said retrieved component is visible for detection;

an optical fiducial marker detector oriented to detect the detectable location of the fiducial marker on said retrieved component and generate alignment data for said retrieved component; and

a controller coupled to said fiducial marker detector for receiving said alignment data therefrom for said retrieved component and containing instructions which, when executed, cause said controller to compare said alignment data for said retrieved component to desired alignment data indicative of desired lead orientations, said controller sending realignment signals to said component transfer mechanism for said retrieved component wherein the alignment data

F2
concl. therefor differs from said desired alignment data to cause said component transfer mechanism to move said retrieved component to a discard area when the alignment data therefor differs from the desired alignment data.

F3
85. (Amended) A component transfer system comprising:
a plurality of electrical components for placement on one or more substrates, each component having two sides that are substantially parallel to each other and that each have an equivalent number of leads protruding therefrom, and wherein each component has a first marker on a surface of the component and wherein the first marker superficially alters a physical appearance of the component to indicate a predetermined orientation of the leads, said plurality of components supported in a component feed source;
a pick and place machine oriented to retrieve a component from the feed source and place the retrieved component in a transfer area such that the fiducial marker is visible for detection;
an optical marker detector oriented to detect the marker on the retrieved component and generate alignment data that is indicative of the position of the marker within the transfer area;
and
a controller in communication with said marker detector for receiving said alignment data therefrom and containing instructions which, when executed by the controller, cause the controller to compare the alignment data received from the marker detector and compare it to predetermined alignment data to ascertain whether the retrieved component is correctly aligned within the transfer area.

✓ Please add claims 88-90: